



**Claims**

RECEIVED

FEB 13 2004

TECHNOLOGY CENTER R3700

What I claim as my invention Is:

**Claim 1 (currently amended)**

A diagnostic cylindrical or any other longitudinal probe ~~that is~~ introduced through the body surfaces to the target tissue through a hollow cylindrical or any other longitudinal metal sheath to identify the tissue type and predict the nature of its pathology for an anomalous tissue before actual cutting of the biopsy by detecting the mechanical resistance of the tissues to piercing, by having an electrical circuit composed of

• a compressible sharp piercing tip fixed to the end of the probe through a coiled wire sliding over the surface of an inbuilt changeable electrical resistance as well as a metal blade or any other electrically conductive surface, ~~a wire~~ a first wire ,

- a. running inside the body of the probe,
- b. integrated into but electrically isolated from the wall of the body of the probe or
- c. running along the outer surface of the probe with a groove or tunnel at the corresponding part facing the wire in the metal sheath or
- d. any other mean to connect the electrical or any other detectable signal

connecting one terminal of the resistance to ~~the electrical source~~ an electrical source.

- ~~an electrical source~~ the electrical source is located at the handle of the probe or separately outside the probe
- an Ammeter or Voltmeter to detect the electrical current intensity or voltage with possibility of adding a registering unit on sensitive or ordinary paper and
- ~~a wire~~ a second wire ,
  - a. running inside the body of the probe,
  - b. integrated into but electrically isolated from the wall of the body or
  - c. running along the outer surface of the probe with a groove or tunnel at the corresponding part facing the wire in the metal sheath or
  - d. any other mean to connect the electrical or any other detectable signal along the body of the probe.

connecting the electrical source to the metal blade, so that, the nature of the target tissue is detected by changing the mechanical resistance ~~monitoring the change in the electrical resistance in the circuit~~ ~~which will indicate the resistance~~ faced by the tip of the probe during its passage in the target tissues ~~with a constant speed~~ into a change in the electrical resistance or any other detectable signal.

followed by replacement of the probe with ~~the cutting grooved biopsy needle~~ a grooved biopsy needle or any other tissue cutting instrument of identical size and length through the same metal sheath to cut the target tissue for biopsy without the need to introduce through a different orifice.

## **Listing of claims**

Claim 1 (Currently amended)

Claim 2 (Currently amended)

Claim 3 (Currently amended)

## Claim 2 (currently amended)

~~The previously mentioned probe is a cylindrical probe that is introduced through the body surfaces to the target tissue through a hollow cylindrical metal sheath~~

~~to identify the tissue type and predict the nature of its pathology for an anomalous tissue before actual cutting of the biopsy~~

~~by detecting~~ The probe according to claim 1 has said piercing tip containing 2 electrically isolated electrodes connected to an electrical circuit to detect the electrical resistance of the tissues to passage of electrical current,

~~by having an electrical circuit,~~ composed of

• ~~a wire~~ a first wire running inside the body of the probe with one of its terminals at the tip of the probe & and the other terminal connected to an electrical source,

• ~~an electrical source~~ the electrical source is located at the handle of the probe or separately outside the probe

• an Ammeter or Voltmeter to detect the electrical current intensity or voltage with possibility of adding a registering unit on sensitive paper and

• ~~a wire~~ a second wire running inside the body of the probe with one end connected to the electrical source & the other end is located at the tip of the probe near the end of the ~~other wire~~ said first wire

so that

the nature of the target tissue is detected by monitoring the electrical resistance exerted by the tissue surrounding the tip to the passage of the current between the ends of the two wires

followed by replacement of the probe with ~~the cutting grooved biopsy needle~~ a grooved biopsy needle or any other cutting device of identical size and length through the same metal sheath to cut the target tissue for biopsy without the need to introduce through a different orifice.

### Claim 3 (currently amended)

~~The probe according to claim 1 The previously mentioned probe is a cylindrical probe that is introduced through the body surfaces to the target tissue through a hollow cylindrical metal sheath to identify the tissue type and predict the nature of its pathology for an anomalous tissue before actual cutting of the biopsy by detecting the electrical impedance of the tissues by having~~ has an electrical circuit to detect the electrical impedance composed of,

- a sensor at its tip electrically isolated from the probe by a transverse insulator to detect the electrical impedance of the target tissue
  - ~~a wire~~ a first wire running inside the body of the probe with one of its terminals at the tip of the probe & and the other terminal connected to ~~the an~~ an electrical impedance monitor
  - ~~a wire~~ a second wire connecting the electrical impedance monitor to the body of the probe, which will work as a neutral isoelectric point.
- so that

the nature of the target tissue is detected by monitoring the electrical impedance exerted by the tissue surrounding the tip followed by replacement of the probe with ~~the cutting grooved biopsy needle~~ a grooved biopsy needle or any other cutting device of identical size and length through the same metal sheath to cut the target tissue for biopsy without the need to introduce through a different orifice

Thank you,

Mohamed khaled Mohamed El Hatw

52 Tayaran Street Nasr City, Cairo. Egypt